

Appendix A: SQL enhancements

For Meridian IVR/I 2.0/I, SQL functionality has been expanded in the following ways:

- Oracle database access through unique SQL keys
- Remote database access now includes all supported database types

Oracle database access through unique SQL keys

Five of the six SQL fields in the Default Cell parameter page now work together to specify a set of Generic Data Server (GDS) processes for your Meridian IVR 2.0/I applications to communicate with. See the Meridian IVR 2.0/I Application Development Guide for information on editing the Default Cell parameters.

Variables for database options

Refer to the following sections for information on setting environment variables for each of the database options.

Informix

Edit the **sys_files/informix.conf** file so that the environment variables DBPATH, INFORMIXDIR, and SQLEXEC are set to the values recommended by your Informix installation notes.

Ingres

Edit the **sys_files/ingres.conf** file so that the environment variable II_SYSTEM is set to the value recommended by your Ingres installation notes.

Oracle 7

Edit the **sys_files/oracle.conf** file so that the environment variables ORACLE_HOME and ORACLE_SID are set to the values recommended by your Oracle 7 installation notes.

Sybase

Edit the **sys_file/sybase.conf** file so that the environment variable DSQUERY, SYSBASE, and SYBPLATFORM are set to the values recommended by your Sybase installation notes.

Remote database access

Your Meridian IVR 2.0/I applications can now access all four types of RDBMS (Ingres, Informix, Sybase, and Oracle) remotely. This means your database servers no longer need to reside on your application processor for your applications to access their data. The following database software packages are required on the Meridian IVR application processor to provide this service

RDBMS	Supported Release	Description
Informix	5.0 (or newer)	This Ingres software package must be for Intel Pentium processor, SCO Open Desktop Lite R3.0 on 5-1/4 inch cartridge tapes or 3-1/2 inch diskettes. The users (VADs or end customers) must purchase this package directly from Ingres Inc.
Oracle	7.0 (or newer) or 7.1 (or newer)	This Oracle software package must be for Intel Pentium processor, SCO Open Desktop Lite R3.0 on 5-1/4 inch cartridge tapes or 3-1/2 inch diskettes. The users (VADs or end customers) must purchase this package directly from Oracle Corp.
Ingres	6.4 (or newer)	This Informix software package must be for Intel Pentium processor, SCO Open Desktop Lite R3.0 on 5-1/4 inch cartridge tapes or 3-1/2 inch diskettes. The users (VADs or end customers) must purchase this package directly from Informix Software Inc.
Sybase	10.0 (or newer)	This Sybase software package must be for Intel Pentium processor, SCO Open Desktop Lite R3.0 on 5-1/4 inch cartridge tapes or 3-1/2 inch diskettes. The users (VADs or end customers) must purchase this package directly from Sybase Inc.

Accessing data residing in an Oracle Database

There are two possible scenarios that a multiple-instance Oracle installation may need to address. Note that Oracle is an extremely rich RDBMS, and other variations are possible. Any combination of the following two scenarios will be directly addressed in this release:

- Multiple Instance/Databases using the same Oracle product tree
- Multiple Instance/Databases using different Oracle product trees

There are three basic steps that must occur prior to accessing data residing in an Oracle table:

- Create an Oracle Instance
- Mount the Database
- Open the Database

Creating an Oracle Instance involves allocation of an Oracle SGA (a shared memory region) and starting a set of Oracle background processes.

Mounting an Oracle database associates a physical database with a running instance. For our discussions there is a one-to-one correspondence between Instances and databases, both identified by the same UNIX environment variable `ORACLE_SID`.

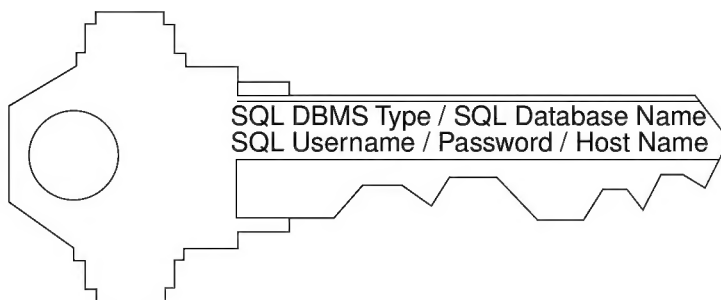
You must open the database before you can access it.

Oracle Instance/Database identification

The Instance is the set of processes and SGA, and the database is the physical manifestation of data. An Oracle Instance and an Oracle Database can be considered identical. Both of these are identified by the single UNIX environment variable `ORACLE_SID`. Prior to connecting to an Oracle Instance, you must set this variable to the correct value. Additionally, you must set the UNIX environment variable `ORACLE_HOME` to the correct product tree for a given Instance/Database. You can look up this value in the `ORATAB` file.

Generic data server key

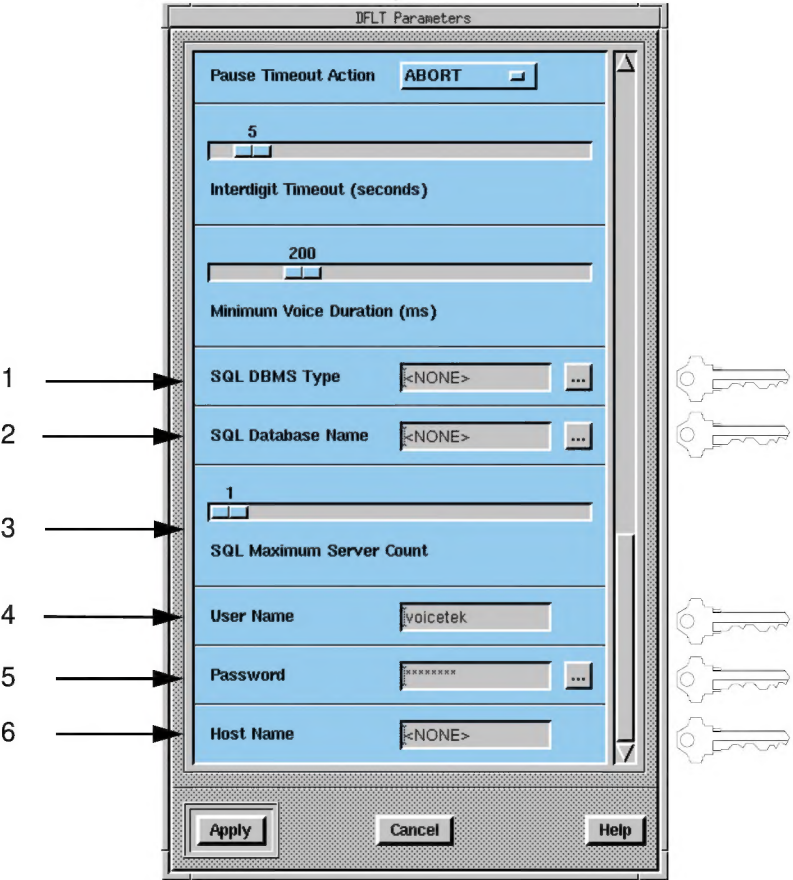
In this release of Meridian IVR 2.0/I, the SQL DBMS Type, SQL Database Name, SQL Username, Password, and Host Name work together to form a unique five-part key that specifies a set of Generic Data Server (GDS) processes for an application to communicate with.



This key lets a specific Meridian IVR 2.0/I application communicate with a specific database, and eliminates any ambiguity as to which database your applications will access.

You create this key through the Default Cell parameters. There are six parameters in the Default cell that pertain to SQL, five of which form the key. Look at Figure A-1— each parameter is clearly marked. Key symbols to the right of the illustration show which parameters are used to form the key.

Figure A-1
Generic data server keys



SQL DBMS type

This specifies the type of SQL database that the application will be using. The current choices are:

- INGRES
- ORACLE
- SYBASE
- INFORMIX

This field is the first part of the key that determines which set of Generic Data Server (GDS) processes an application should use for database access.

SQL database name

This specifies the name of the database that the application will communicate with. Prior to this release of Meridian IVR 2.0/I, this field was only functional for Ingres and Informix databases. It now functions for Ingres, Informix, and Oracle.

When the SQL DBMS Type is ORACLE, this field will specify the Oracle Database Name. Note that the Oracle database name is commonly specified using the UNIX environment variable ORACLE_SID. This value, specified by the user, as well as the ORATAB file will uniquely identify an Oracle database and its instance. For more complete details regarding the specifics of Oracle Databases and Instances, refer to the *Oracle7 Server Concepts Manual*.

This field is the second part of the key that determines which set of GDS processes an application should use for database access.

SQL maximum server count

This field specifies the number of GDS processes that applications with the same key will have. The first application you load containing an SQL key determines the number of GDSs for that key. All subsequent applications with that key use the number of GDSs determined by the first application loaded. This value can range from 1 to 99.

User name

This field specifies the username used for connection to an SQL database. Each type of database has a slightly different approach to this functionality.

This field is the third part of the key that determines which set of GDSs an application should use for database access.

Ingres and Informix

Ingres and Informix set database permissions based on the Operating System credentials of the user who opens the specified database. Therefore, prior to connection, these databases switch to the specified user, with password validation, using appropriate UNIX system calls.

Oracle and Sybase

Oracle and Sybase set database permissions as part of the SQL command used to connect to the database.

Password

This field is used for validation for all four RDBMSs.

This is the fourth part of the key.

Host name

This specifies the remote host identifier used to open/connect to SQL database servers not running locally (on the same machine as the GDSs). For Informix, the remote system//directory_path will be limited to 31 characters in length.

This field is the fifth and last part of the key.

Meridian IVR

SQL Server User's Guide

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